

Claims

- [c1] 1. A synthetic turf sports field comprising:
a plurality of modular units coupled together in a desired configuration, each of the modular units comprising:
a modular base structure;
an elastomeric material coupled to a top side of said modular base structure;
a synthetic turf material layer coupled onto said elastomeric material, said synthetic turf material layer comprising a plurality of fibrillated synthetic grass strands tufted into a backing layer, said fibrillated synthetic grass strands having a first pile length extending from said backing layer, said first pile length being between about 0.5 and 2.5 inches;
an optional adhesive layer between said elastomeric material and said synthetic turf material layer; and
an optional layer of resilient particle infill placed onto said synthetic turf material layer to a first depth, said first depth being less than said first pile length.
- [c2] 2. The synthetic turf sports field of claim 1, wherein said modular base structure comprises a plurality of pallets fastened together in a desired rectangular configuration.

- [c3] 3. The synthetic turf sports field of claim 1, wherein said elastomeric layer comprises a rubber based elastomeric layer.
- [c4] 4. The synthetic turf sports field of claim 1, wherein said optional adhesive layer comprises a layer of Nordot 346 adhesive.
- [c5] 5. The synthetic turf sports field of claim 1, wherein said plurality of fibrillated synthetic grass strands comprises a plurality of fibrillated polyethylene grass strands.
- [c6] 6. The synthetic turf sports field of claim 1, wherein said synthetic turf material layer is selected from the group consisting of Thiolon XPS, Thiolon XP and Thiolon LSR.
- [c7] 7. The synthetic turf sports field of claim 1, wherein said synthetic turf material layer is formed utilizing a knit-to-knit process.
- [c8] 8. The synthetic turf sports field of claim 1, wherein said plurality of fibrillated synthetic grass strands has a denier of at least 10000.
- [c9] 9. The synthetic turf sports field of claim 1, wherein said backing material comprises one or more layers of a double woven polypropylene backing material.

- [c10] 10. The synthetic turf sports field of claim 1, wherein said layer of resilient particle infill comprises a layer of cryogenically ground vulcanized rubber infill having an average mesh size of between approximately 8 and 30.
- [c11] 11. The synthetic turf sports field of claim 1, wherein said layer of resilient particle infill comprises a mixture of a layer of cryogenically ground vulcanized rubber infill having an average mesh size of between approximately 8 and 30 and a second resilient material, said second resilient material being selected from the group consisting of ambiently ground rubber, crumb rubber, cork, and polymer beads.
- [c12] 12. A method for assembling a modular sports field, the method comprising:
- (a) forming a plurality of modular units, each of said plurality of modular units comprising:
 - a modular base structure;
 - an elastomeric material coupled to a top side of said modular base structure;
 - a synthetic turf material layer coupled onto said elastomeric material, said synthetic turf material layer comprising a plurality of fibrillated synthetic grass strands tufted into a backing layer, said fibrillated synthetic grass strands having a first pile length extending from said backing layer, said first pile length being between

about 0.5 and 2.5 inches;

an optional adhesive layer between said elastomeric material and said synthetic turf material layer;

an optional layer of resilient particle infill placed onto said synthetic turf material layer to a first substantially uniform depth, said first substantially uniform depth being less than said first pile length; and

an optional plastic sleeve coupled around each modular base structure;

(b) placing at least two of said plurality of modular base structures on a relatively flat surface in a desired configuration;

(c) removing said optional plastic sleeve from each of said at least two of said plurality of modular base structures;

(d) substantially abutting one of said at least two of said plurality of modular base structures to an adjacent one of said at least two of said plurality of modular base structures such that said synthetic turf material layer of said one of said at least two of said plurality of modular base structures is level with respect to said adjacent one of said at least two of said plurality of modular base structures; and

(e) optionally grooming said layer of said resilient particle infill such that the depth of said layer of said resilient particle infill of said one of said at least two of said plu-

ality of modular base structures is level with said adjacent one of said at least two of said plurality of modular base structures.

- [c13] 13. The method of claim 12, wherein said modular base structure comprises a plurality of pallets fastened together in a desired rectangular configuration.
- [c14] 14. The method of claim 12, wherein said elastomeric layer comprises a rubber based elastomeric layer.
- [c15] 15. The method of claim 12, wherein said optional adhesive layer comprises a layer of Nordot 346 adhesive.
- [c16] 16. The method of claim 12, wherein said plurality of fibrillated synthetic grass strands comprises a plurality of fibrillated polyethylene grass strands.
- [c17] 17. The method of claim 12, wherein said synthetic turf material layer comprises a fibrillated synthetic grass surface selected from the group consisting of Thiolon XPS, Thiolon XP and Thiolon LSR.
- [c18] 18. The method of claim 12, wherein said synthetic turf material layer is formed utilizing a knit-to-knit process.
- [c19] 19. The method of claim 12, wherein said plurality of fibrillated synthetic grass strands has a denier of at least 10000.

- [c20] 20. The method of claim 12, wherein said backing material comprises one or more layers of a double woven polypropylene backing material.
- [c21] 21. The method of claim 12, wherein said optional layer of resilient particle infill comprises a layer of cryogenically ground vulcanized rubber infill having an average mesh size of between approximately 8 and 30.
- [c22] 22. The method of claim 12, wherein said optional layer of resilient particle infill comprises a mixture of a layer of cryogenically ground vulcanized rubber infill having an average mesh size of between approximately 8 and 30 and a second resilient material, said second resilient material being selected from the group consisting of ambiently ground rubber, crumb rubber, cork, and polymer beads.
- [c23] 23. The method of claim 12 further comprising:
(f) fastening said one of said at least two of said plurality of modular base structures to said adjacent one of said at least two of said plurality of modular base structures prior to step (e).
- [c24] 24. The method of claim 23, wherein (f) one fastening said one of said at least two of said plurality of modular base structures to said adjacent one comprises (f) fas-

tening said one of said at least two of said plurality of modular base structures to said adjacent one of said at least two of said plurality of modular base structures prior to step (e) utilizing 3/8 inch all-thread rods with coarse-thread hex nuts and 5/16 inch washers.

- [c25] 25. The method of claim 12, wherein (d) substantially abutting one of said at least two of said plurality of modular base structures to an adjacent one comprises:
- providing a forklift;
 - introducing a fork of a forklift within an opening of one of said at least one of said pallets comprising said one of said modular base structures;
 - moving said one of said modular base structures to a desired position on a floor to be covered;
 - removing said fork from said opening;
 - introducing said fork with a respective opening of said adjacent one of said modular base structures;
 - moving said adjacent one of said modular base structures to a position such that a respective side region of each of said one and said adjacent one of said modular base structures substantially abuts and such that said synthetic turf material layer of said one of said at least two of said plurality of modular base structures is level with respect to said adjacent one of said at least two of said plurality of modular base structures; and

removing said fork from said respective opening of said adjacent one of said modular base structures.

[c26] 26. The method of claim 25 further comprising (f) disassembling the modular playing field after usage by:
introducing said fork within said opening of said one of said at least one of said pallets comprising said one of said modular base structures;
moving said one of said modular base structures to from said desired position on said floor to a storage area;
removing said fork from said opening;
inserting said plastic sleeve around said one of said modular base structures;
introducing said fork with a respective opening of said adjacent one of said modular base structures;
moving said adjacent one of said modular base structures to said storage area;
removing said fork from said respective opening of said adjacent one of said modular base structures;
introducing another of said plastic sleeves around said adjacent one of said modular base structures;
reintroducing said fork within said respective opening of said adjacent one of said modular base structures;
stacking said adjacent one of said modular base structures onto said one of said modular base structures; and
removing said fork from said respective opening of said

adjacent one of said modular base structures.

[c27] 27. The method of claim 12 further comprising inlaying at least one feature within said synthetic turf material layer prior to introducing said layer of rubber infill onto said synthetic turf material layer.

[c28] 28. The method of claim 12 further comprising stencil-ing at least one feature within said synthetic turf material layer prior to introducing said layer of rubber infill onto said synthetic turf material layer.

[c29] 29. A method for forming a modular unit for use in a synthetic turf sports field, the method comprising:
forming a modular base structure;
coupling an elastomeric material to a top side of said modular base structure;
optionally applying an adhesive to a first side of said elastomeric material;
coupling a synthetic turf material layer coupled onto said elastomeric material such that said adhesive is between said top side and said synthetic turf material layer, said synthetic turf material layer comprising a plurality of fibrillated synthetic grass strands tufted into a backing layer, said fibrillated synthetic grass strands having a first pile length extending from said backing layer, said first pile length being between about 0.5 and 2.5 inches;

optionally introducing a layer of resilient particle infill onto said synthetic turf material layer to a first substantially uniform depth, said first substantially uniform depth being less than said first pile length; and optionally coupling a plastic sleeve coupled around each modular base structure.

[c30] 30. The method of claim 29, wherein forming a modular base structure comprises:
providing a plurality of pallets; and
fastening together at least two of said plurality of pallets to form a modular base structure having a desired rectangular configuration.

[c31] 31. The method of claim 30, wherein fastening together at least two of said pallets comprises:
(a) fastening one of said plurality of pallets to an adjacent one of said plurality of pallets utilizing 3/8 inch all-thread rods with coarse-thread hex nuts and 5/16 inch washers;
(b) repeating step (a) for each additional one of said plurality of pallets.

[c32] 32. The method of claim 29 further comprising inlaying at least one feature within said synthetic turf material layer prior to introducing said layer of rubber infill onto said synthetic turf material layer.

- [c33] 33. The method of claim 29 further comprising stencil-
ing at least one feature within said synthetic turf material
layer prior to introducing said layer of rubber infill onto
said synthetic turf material layer.
- [c34] 34. The method of claim 29 further comprising fastening
said elastomeric layer to said synthetic turf material layer
using at least one mechanical fastener.